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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,274	09/16/2003	Ben M. Ishino	38190/265282	1470

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EXAMINER

BURCH, MELODY M

ART UNIT PAPER NUMBER

3683

DATE MAILED: 12/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/663,274

Applicant(s)

ISHINO, BEN M.

Examiner

Melody M. Burch

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/16/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5-8, 10-15, and 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6244541 to Hubert in view of US Patent 6416030 to Bergdahl et al.

Re: claims 1-3, 5, 6, 12-15, 17, and 18. Hubert shows in figures 1 and 10 a shock isolation system for reducing a transmission of energy in the form of shocks between first (4,6, 10''') and second (1,2,3,5,11''') devices, the system comprising: at least two linear assemblies 22i extending substantially parallel in an axial direction between the first and second devices, the assemblies restraining rotation between the first and second devices about an axis defining the axial direction to the same extent as Applicant, but does not disclose that the linear assemblies are linear bearing assemblies as claimed.

Bergdahl et al. teach in figure 1 the use of a linear bearing assembly extending substantially parallel in an axial direction between a first 50 and a second 26 device, the bearing assembly having a shaft member 54 connected to one of the first and second devices (particularly the first device) and a linear bearing 14 connected to the other of the first and second devices, the linear bearing being configured to move axially on the

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shaft member such that the first and second devices are configured for relative motion therebetween in the axial direction; and at least two isolators 32,34 configured to be axially loaded by a relative motion between the first and second devices in the axial direction, the isolators thereby being deformed to at least partially reduce the transmission of energy between the devices.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the linear assemblies of Hubert to have been linear bearing assemblies, as taught by Bergdahl et al., in order to provide a means of facilitating relative axial movement between the two devices.

Re: claims 7 and 19. Hubert, as modified, discloses the claimed invention except for the limitation of the isolators being formed of at least one of the groups consisting of rubber and elastically deformable polymers. Since Applicant failed to provide an explanation of criticality associated with the specific use of rubber or elastically deformable polymers Examiner maintains that it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the isolators to have been made of rubber, for example, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability of the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Re: claims 8 and 20. Hubert, as modified, shows the limitation wherein at least some of the isolators 32,34 comprise elastomeric springs, as broadly claimed.

Re: claim 10. Hubert shows in figure 1 and discloses in col.1 lines 23-31 the limitation wherein at least one of the first and second devices (particularly the second device 1,2,3,5,11""") is a boost vehicle configured to provide thrust for propulsion.

Re: claim 11. Hubert shows in figure 1 the limitation wherein at least one of the first and second devices (particularly the first device 4,6,10""") is a kill vehicle.

3. Claims 4 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6244541 to Hubert in view of US Patent 6416030 to Bergdahl et al. as applied to claims 1 and 12 above, and further in view of US Patent 5884736 to Burdisso et al.

Hubert, as modified, describe the invention substantially as set forth above including disclosure in col. 2 lines 54-55 that a lubricant can be placed between element 14 and 40 of the bearing assembly to effect a low friction interface, but does not include the limitation of the linear bearing having a plurality of balls for rollably contacting the shaft member.

Burdisso et al. teach in figure 3 the use of a shock isolation system comprising a linear bearing having a plurality of balls shown in the area of the lead arrow of number 303.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the linear bearing of Hubert, as modified, to have included balls between the elements 14 and 40 in order to result in an alternate means of providing a low friction interface to facilitate sliding.

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4. Claims 9 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6244541 to Hubert in view of US Patent 6416030 to Bergdahl et al. as applied to claims 1 and 12 above, and further in view of US Patent 2729443 to Olinger.

Hubert, as modified, describe the invention substantially as set forth above, but does not include the limitation of the linear bearings and isolators being arranged in substantially planar and polygonal configuration.

Olinger shows in figure 4 the use of a shock isolation system comprising linear assemblies arranged in substantially a planar and polygonal configuration.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the arrangement of the linear bearing assemblies of Hubert, as modified, to have been in a substantially planar and polygonal configuration, as taught by Olinger, in order to provide a desired distribution of shock isolation. Examiner also notes that the change in the shape of the arrangement of the linear bearing assemblies is a matter of design choice absent evidence that the particular configuration is significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Response to Arguments

5. Applicant's arguments, see pg. 6, filed 11/16/04, with respect to the 112 rejection of claims 2 and 9 have been fully considered and are persuasive. The 112 rejections of claims 2 and 9 have been withdrawn. Examiner agrees that the phrase "linear bearing assemblies and isolators" is proper since claim 1 does not state that the linear bearings

include isolators but that the system includes both linear bearing assemblies and isolators.

6. Applicant's arguments filed 11/16/04 have been fully considered but they are not persuasive.

Applicant argues that the bearing assemblies of Hubert, as modified, do not restrain a rotation between the first and second devices about an axis defining the axial direction.

Examiner notes that Hubert, as modified, restrains a rotation between the first and second devices about an axis defining the axial direction, as broadly claimed. The plurality of linear assemblies 22i,23i shown in figure 10 and disclosed in col. 7 lines 20-21 of Hubert situated around the periphery in an area between the first 10''' and second 11''' devices with the first and second devices being connected by linear bearing assemblies 12,14,40,54 of Hubert, as modified, (see figure 1 of Bergdahl et al.) wherein the linear bearing assemblies serve to restrain rotation about an axis defining an axial direction between the first and second devices. Examiner maintains that, as broadly claimed, the term "restrain" is defined by Webster's Collegiate Dictionary 13th Edition as "to moderate or limit the force or effect of". In light of the definition, Examiner maintains that the linear bearing 12,14,40,54 of Hubert, as modified, moderates or limits the force or effect of rotation about the axis defining the axial direction due to the presence of element 12. Without element 12 rotation about the axis defining the axial direction would be unchecked until either elements 32,34 were stretched to their limits or until the outer surface of element 14 contacted the inner surface of element 20. The claim

language does not recite that the linear bearing *prevents an occurrence of rotation* about the axis defining the axial direction.

Applicant also argues that there exists no motivation for the combination of Bergdahl with Hubert. Examiner maintains that Hubert describes the invention substantially as set forth above and that Bergdahl is used solely for the teaching of the linear assemblies specifically being linear bearing assemblies. The use of linear bearing assemblies, as taught by Bergdahl, enable a shock isolation system to better meet diverse considerations involving noise, vibration, and harshness and vehicle dynamics as suggested in the last three lines of the abstract of Bergdahl.

Finally, Applicant argues that Hubert nor Bergdahl show or suggest the limitation of the linear bearing assemblies being configured to be independently axially moved such that the first device is configured to rotate relative to the second device about an axis transverse to the axial direction. Examiner notes that the presence of an isolator located above and below the middle device of the first and second devices of the system within each of the linear bearing assemblies constitutes the configuration necessary to allow independently axially moved linear bearing assemblies enabling relative rotation of the first and second devices about an axis transverse to the axial direction. Examiner further notes that Hubert, as modified, teaches the presence of an isolator above 32 and below 34 the middle device 26 as clearly shown in figure 1 of Bergdahl.

Accordingly, the rejections set forth above have been maintained.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patents 1823429 to Jansson et al. and US Patent 6561312 to Stanienda teach the use of shock isolation systems in which a linear bearing assembly prevents the occurrence of rotation about an axis defining an axial direction due to the lack of an isolator between one of a pair of devices of the system and a shaft member of the system.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melody M. Burch whose telephone number is 703-306-4618. The examiner can normally be reached on Monday-Friday (7:30 AM-4:00 PM).

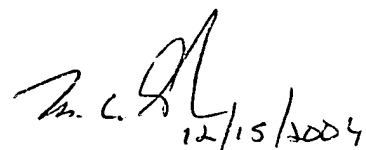
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A. Marmor can be reached on 703-308-0830. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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12/15/2004
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